

study of organisms, which in a living state are for the most part many hundreds of miles from his door, must have presented a task in conquering which his zeal and power of work can find no better example than the volume before us. To a great extent this work must have been book work, and excellent book work it is, the purely bibliographical work especially; and with the aid of herbarium specimens Dr. Oltmanns has succeeded in giving us a general morphology of the Algæ—a treatise to have been expected only from one with abundant leisure and a microscope near the sea. To approach, then, in a spirit of criticism an encyclopædic book of this kind, to try to gauge its worth, seems in the circumstances scarcely “sportsmanlike,” if I may use such a term, on the part of one who has had so many greater opportunities of observation.

The De Bary of the subject is, of course, Dr. Bornet, and no student can for a moment question his pre-eminent claims to instruct us. Schmitz, of Greifswald, whose loss we can never cease to deplore, seemed destined to employ his indomitable industry in a work of this kind. Happily we have Dr. Oltmanns, and happily he has had the courage to undertake a task so full of use and pleasure to all students of this fascinating group of plants.

I do not wish for a moment even to seem to detract from the great performance of Dr. Oltmanns. One irresistibly comes back to the Freiburg and De Bary standard. One hoped for a general morphology of the Algæ as De Bary gave us one of the fungi. Dr. Oltmanns has given us an encyclopædic book—an admirable one—but not the reasoned work of genius botanists have dreamt of.

According to personal prejudice, very possibly, I mean prejudice in the right sense of the word, I turned first to the obscure groups of primitive Algæ, groups that I have had so many opportunities of studying on the sea, and of which Dr. Oltmanns can have had few chances of seeing living specimens. It so happened that while writing this review the present writer was engaged in describing a new generic form of pelagic Alga obtained on the outward voyage of the *Discovery*. The point was put to the test by consulting Dr. Oltmanns's descriptions and bibliography. From that, of course, the original sources were taken and verified, not so much for the immediate purpose, as was natural in any case, as for the aim of doing justice in reviewing Dr. Oltmanns's book. The result was triumphant for Dr. Oltmanns—every reference and every description having been pursued to its original source. It is difficult to establish a negative, but no reference was found wanting.

Naturally one turned next to the group Dr. Oltmanns has made his own—the Fucaceæ. It may seem presumption, but it was dutiful, and here, again, the book stood every test. The other groups of Algæ were not made the subject of such rigorous treatment, but they were examined with scrutiny enough to warrant the expression of a very warm and hearty recommendation of this great book to the consideration of botanists and cultivated readers.

GEORGE MURRAY.

OUR BOOK SHELF.

Game, Shore and Water Birds of India: with Additional References to their Allied Species in Other Parts of the World. By Colonel A. Le Messurier, C.I.E., F.Z.S., F.G.S. Fourth edition. Pp. xvi+323. (London: Thacker and Co., 1904.)

THE first edition of this work was a modest little volume, printed for private circulation only, on the birds of Sind. This appeared so far back as 1874. Four years later, with some additions, it was issued to the public. Hume and Marshall's epoch-making work on the game birds of India appearing at the same time made a third edition imperative. This in due time appeared, and large additions were made thereto, taken, with acknowledgments, from this formidable rival. Meeting with a well merited success, a fourth edition has now been issued, which differs from the earlier volumes in that it “includes references to all species in other parts of the world that are allied to the Game, Shore, and Water Birds of India.”

This addition is made on the curious plea that “owing to the facilities of travel, Anglo-Indians are now engaged in most countries either on business or pleasure.” It is to be supposed that Anglo-Indian sportsmen are here specially referred to, and further, that, save for this volume, no information concerning the avifauna of the countries they propose to visit is obtainable. That this is not the case it is needless to say, and the traveller-sportsman would be ill advised who started on his journey with this volume for his only guide and counsellor.

In so far as it concerns the birds of India likely to interest the sportsman, this book will do very well; but it would have been vastly improved if the space now devoted to extra-Indian birds had been utilised for fuller descriptions of the native species, and for the description of the geographical and climatic conditions of the several regions of this vast hunting ground.

The introduction to this book contains, we venture to think, not a little that is out of place in a work of this kind. Much of it is admittedly compiled from abstruse scientific treatises, or from the labels of the Natural History Museum at South Kensington.

There can be no doubt but that the author, during his long residence in India and his wide experience in the field, must have accumulated a vast store of facts concerning Indian birds which would be well worth recording. For this reason, therefore, we regret that he decided on including in this edition matter really foreign to the scope of his book. His first-hand observations would have been of infinitely more interest and value than the compilation now presented.

The illustrations are numerous, and mostly very crude.

W. P. P.

The Species of Dalbergia of South-Eastern Asia. By Dr. D. Prain. (Annals of the Royal Botanic Gardens, Calcutta, vol. x., part i.) Pp. iv+114; and plates. (Calcutta, 1904.) Price 1l. 13s.

THE stages in the evolution of the genus *Dalbergia* are sketched in the early pages of this memoir. After removal of the extraneous species, the genus was delimited by Bentham in 1851, and four subdivisions, *Selenolobium*, *Dalbergaria*, *Sissoa*, and *Triptolomea*, were mapped out. Although Bentham himself pointed out that there was overlapping in these subdivisions, the grouping has been maintained by later systematists down to and including Taubert, who undertook the Leguminosæ for the “Pflanzenfamilien” in 1894. Dr. Prain, who had previously reviewed the genus when collating the Leguminosæ in connection with “Materials for a Flora of the

Malayan Peninsula," has, after a study of several years, introduced a new arrangement with two main sections, Sissoa, which includes the greater part of Bentham's *Triptolomea* and Sissoa, and Amerimnon, called after an American type. Dr. Prain's classification differs from Bentham's, since he adopts the shape and orientation of the corolla and the form of the style as the criteria of his subdivisions instead of the characters of the inflorescence, stamens, and fruit.

The genus is distributed through the tropics of Africa and America as well as Asia, and it seems a pity that the author did not see his way to extend his monograph to all the known species. The distribution in Asia is considered for five provinces, East China, Indo-China, Indo-Himalaya, Malaya, and Papuasia; the number of endemic species in each is large, and amounts to 72 per cent. for East China. Very few species are found in more than two of these provinces; *Dalbergia tamarindifolia* occurs in four, and *Dalbergia torta* (= *D. monosperma*), which has pods well suited for dispersal by ocean currents, is the only species found in all five provinces. Owing to the inclusion of recent specimens from Malay and China, the total number of authenticated species amounts to eighty-six; a few, including the *Dalbergia laccifera* of Lanessan, still remain unidentified. The memoir is illustrated with diagrams of groupings and maps of distribution, as well as with figures of each species, and issued as the first part of the tenth volume it forms a valuable addition to the *Annals* of the Royal Botanic Gardens, Calcutta.

The Process Year Book. Penrose's Pictorial Annual, 1904-5. Edited by William Gamble. Pp. xvi+160. (London: Penrose and Co.)

EVERY year we receive this annual, and each time it is our pleasure to point out the very high standard which the volume attains. The current issue bids us to repeat the opinions expressed in our previous notices, and to supplement them with the statement that the standard has again been changed to one of a higher order.

To gain some idea of the possibilities of process work of to-day, when the best work and materials are employed, the reader has only to take up this book and examine the contents, which will at once indicate the high state of efficiency and the variety of methods that are available. In the first place we have a series of instructive articles, covering 160 pages, most of which are from the pens of well-known workers. These deal with manifold portions of a far-reaching subject, and give the advice, results of experience, and views of these workers on numerous points of interest. Of the illustrations, which form such a conspicuous feature of this annual, much could be written, for it is in them that we see the practical results of the processes in use to-day. If we sum up the plates, colour prints, supplement illustrations, and illustrations in the text, we have a collection which for variety of subjects and excellence of reproduction is unique. The photogravure, as a frontispiece by J. J. Waddington, Ltd., the "Turner" reproduced by the three-colour process of André and Sleight, and the interlaid half-tone by the Arthur Cox Illustrating Co., Ltd., are three amongst a host of other good samples that are met with.

Apart from the large number of process workers who await annually the appearance of this year book, this handsome volume will appeal to a wide circle of readers who are in any way connected with the artistic or utilitarian side of the art of reproducing pictures. The editor and his contributors, together with the publishers and printers, all deserve great credit for such an admirable result of their combined efforts.

LETTERS TO THE EDITOR.

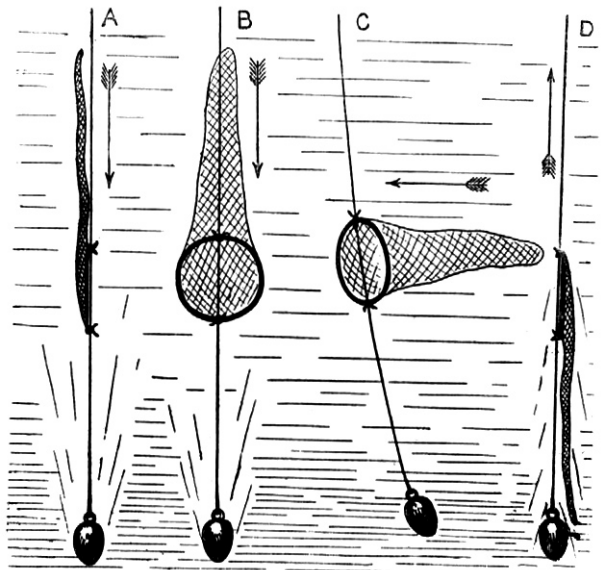
[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

On a Method of Using the Tow-net as an Opening and Closing Tow-net.

EVERY naturalist who has engaged in marine research is aware of the great difficulties which attend upon research in the intermediate depths.

Great ingenuity has been displayed in the invention of very elaborate instruments—many of them hopeful, some of them successful. It had appeared to me, as the result of observations, and after conversation with Mr. J. Y. Buchanan, who had made similar observations, that a solution of this problem might be found easily in experiments with the ordinary tow-net.

Our joint experience was this. If an ordinary tow-net were lashed at two opposite points of the rim to a rigid sounding-wire, and so plunged at speed into the depths, the net would fold over and close. It might then be towed at the required depth and afterwards reeled in by the sounding engine at express speed—again closing in its upward course.



Through the great kindness and sympathy of Mr. M. H. Gray, of the Silvertown Submarine Telegraph Company, I was afforded an opportunity of putting this theory to the test on board the *Dacia*.

The conditions of the experiment appeared to me at the time adverse, since my tow-nets and other apparatus were missing at Gibraltar; but this was a blessing in disguise. I set to work and made a tow-net out of old bunting and the rim out of a barrel hoop. This tow-net was so flimsy that in towing it alongside at little more than mere steerage-way it frequently burst. To plunge it into the depths would be a supreme test, since not even No. 20 Miller's Silk in an open net could stand the strain I proposed. Off the north-west coast of Africa I had three days' opportunity of experiments, the absurd tow-net being in ludicrous inverse proportion to the magnificent sounding crew and sounding engine. A reference to the diagram will show A, the descent of the net folded over; B, the net opening at the required depth; C, the net being towed at the required depth; and D, the net being reeled in closed as in its descent.

I confess that when the first experiment was made I had faint hope of seeing that flimsy tow-net again, but it emerged with many organisms we had not captured on the surface. To cut matters short, these experiments were